

**CLAIMS**

1. Double walled metal tube comprising a tubular roll formed metal band having a brazing layer between the metal layers of the tubular roll formed metal band, wherein the brazing layer consists of a copper alloy, the copper alloy being a copper-tin alloy, wherein the copper-tin alloy comprises 3 – 12 wt% tin.
2. Double walled metal tube according to claim 1, wherein the copper-tin alloy comprises 6 – 8 wt% tin.
3. Double walled metal tube according to claim 1 or 2, wherein the copper-tin alloy comprises essentially 7 wt% tin.
4. Double walled metal tube according to any one of the preceding claims, wherein the metal band is made of steel.
5. Double walled metal tube according to claim 4, wherein the steel band is made of mild steel, the mild steel preferably having a composition of 0.03 – 0.07 % C,  $\leq 0.02$  % P,  $\leq 0.015$  % S,  $\leq 0.06$  % Si, 0.05 – 0.4 % Mn, 0.02 – 0.07 % Al (all percentage in weight), the remainder Fe and unavoidable impurities..
6. Double walled metal tube according to any one of the preceding claims, wherein the metal band from which the tube has been roll formed has a coating of a nickel layer on one side.
7. Metal band, for instance for producing double walled metal tubes according to any one of claims 1 – 6, the metal band having a width of essentially 20 – 80 mm, wherein a coating layer is present on at least one side of the metal band for brazing the metal band, the coating layer being a copper-tin alloy, wherein the copper-tin alloy comprises 3 – 12 wt% tin.

8. Metal band according to claim 7, wherein the copper-tin alloy comprises 6 – 8 wt% tin, preferably essentially 7 wt% tin.
9. Metal band according to claim 7 or 8, wherein the copper-tin alloy layer is present on both sides of the metal band, the copper-tin alloy layer preferably having a thickness of 0.5 – 5  $\mu\text{m}$  on each side, more preferably 3 – 5  $\mu\text{m}$  on one side and 0.5 – 1.5  $\mu\text{m}$  on the other side, and still more preferably about 4  $\mu\text{m}$  on one side and about 1  $\mu\text{m}$  on the other side.
10. Metal band according to claim 7 or 8, wherein the metal band has a coating of a nickel layer on one side of the metal band, preferably a nickel layer having a thickness of 0.5 – 2  $\mu\text{m}$  on one side of the metal band and a copper-tin alloy layer having a thickness of 3 – 5  $\mu\text{m}$  on the other side of the metal band.
11. Metal band according to any one of claims 7 - 10, wherein the metal band consists of steel, preferably mild steel, the mild steel preferably having a composition of 0.03 – 0.07 % C,  $\leq$  0.02 % P,  $\leq$  0.015 % S,  $\leq$  0.06 % Si, 0.05 – 0.4 % Mn, 0.02 – 0.07 % Al (all percentage in weight), the remainder Fe and unavoidable impurities.
12. Metal strip, for instance for making metal bands for producing double walled metal tubes according to any one of claims 1 – 6, wherein a coating layer for brazing purposes is present on at least one side of the metal strip, the coating layer being a copper-tin alloy, wherein the copper-tin alloy comprises 3 – 12 wt% tin.
13. Metal strip according to claim 12, wherein the copper-tin alloy comprises 6 – 8 wt% tin, preferably essentially 7 wt% tin.
14. Metal strip according to claim 12 or 13, wherein the copper-tin alloy layer is present on both sides of the metal strip, the copper-tin alloy layer preferably having a thickness of 0.5 – 5  $\mu\text{m}$  on each side, more preferably

3 – 5  $\mu\text{m}$  on one side and 0.5 – 1.5  $\mu\text{m}$  on the other side, and still more preferably about 4  $\mu\text{m}$  on one side and about 1  $\mu\text{m}$  on the other side.

- 5 15. Metal strip according to claim 12, 13 or 14, wherein the metal strip has a coating of a nickel layer on one side of the metal strip, preferably a nickel layer having a thickness of 0.5 – 2  $\mu\text{m}$  on one side of the metal strip and a copper-tin alloy layer having a thickness of 3 – 5  $\mu\text{m}$  on the other side of the metal strip.
- 10 16. Metal strip according to any one of claims 12 - 15, wherein the metal strip consists of steel, preferably mild steel, the mild steel preferably having a composition of 0.03 – 0.07 % C,  $\leq$  0.02 % P,  $\leq$  0.015 % S,  $\leq$  0.06 % Si, 0.05 – 0.4 % Mn, 0.02 – 0.07 % Al (all percentage in weight), the remainder Fe and unavoidable impurities.
- 15 17. Method of coating a metal strip with a coating layer consisting of a copper-tin alloy comprising the following steps:
- cleaning the metal strip;
  - activating the surface of the metal strip;

20 - continuously coating at least one side of the metal strip with a copper-tin alloy layer comprising 3 – 12 wt% tin;

  - posttreating the metal strip (e.g. applying an anti-oxidising agent).
- 25 18. Method according to claim 17, wherein the metal strip is coated with a copper-tin alloy layer comprising 6 – 8 wt% tin, preferably essentially 7 wt% tin.
- 30 19. Method according to claim 17 or 18, herein the metal strip is continuously coated with a layer of nickel on one side of the metal strip, preferably before the coating of the copper-tin alloy layer.
20. Method according to claim 17, 18 or 19, wherein the metal band is coated using Physical Vapour Deposition (PVD), comprising the following steps:

- 12 -

- cleaning the metal strip;
  - drying the metal strip;
  - activating the metal strip;
  - continuously coating at least one side of the metal strip with a copper-tin alloy layer comprising 3 – 12 wt% tin;
  - cooling of the coated strip;
  - applying an anti-oxidising agent.
21. Method according to claim 17, 18 or 19, wherein the metal band is coated using electroplating, preferably using a copper plated layer and a tin plated layer, the coated metal being subsequently annealed to produce a copper-tin alloy.
22. Method according to claim 17, 18 or 19, wherein the metal band is coated with a copper-tin alloy layer in a tin ion and copper ion containing cyanide bath.